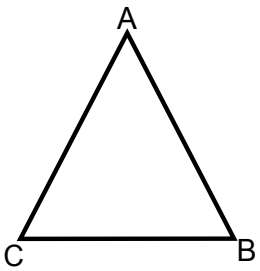
Geom.

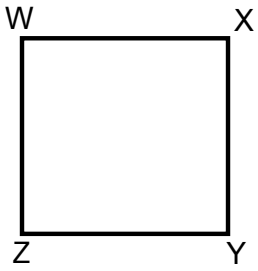
1-6 Polygons

Polygon:

* A closed figure made up of line segments.
* Sides of a polygon are the segments.
* Vertices are the spots where 2 sides come together.
* Each side intersects exactly 2 other sides, but only at their endpoints.
* Name the polygon by the letters of the vertices going in consecutive order.

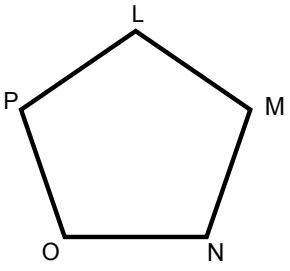


ΔABC

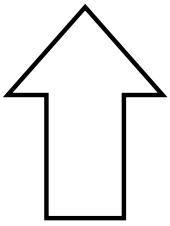


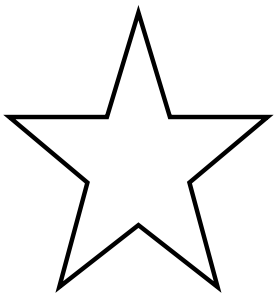
ZWXY

xwzy



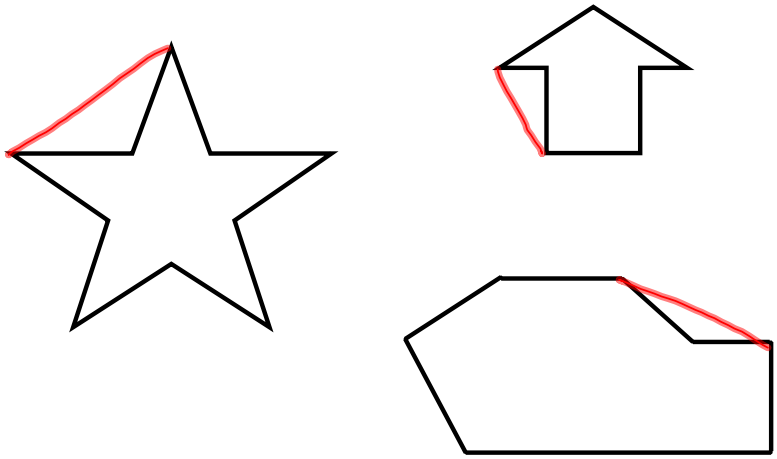
NMLPO





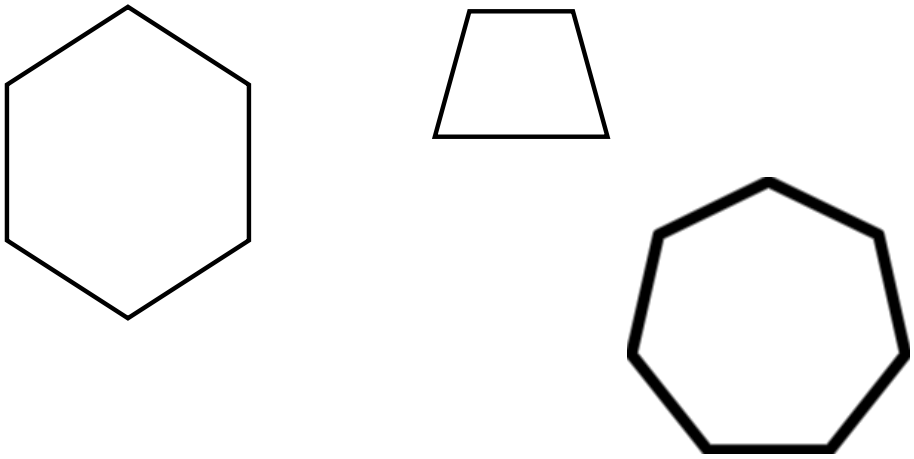
Concave:

* When there are dents.
* If you can connect 2 points on the figure and the segment leaves the figure.



Convex:

* When there are no dents.
* If you can connect 2 points on the figure and the segment stays in the figure.

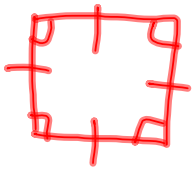


Classify the polygons by the number of sides.

Number of sides	Polygon Name
3	triangle
4	quadrilateral
5	pentagon
6	hexagon
7	heptagon
8	octagon
9	nonagaon
10	decagon
12	dodecagon
n	n - gon

Regular Polygon:

* A convex polygon with all sides congruent and all interior angles are congruent.

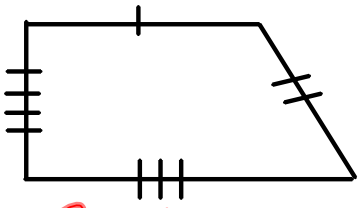


Perimeter:

* The distance around a figure.
* Sum of all the sides.

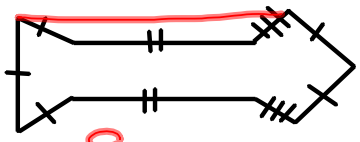
1. Name each polygon by the number of sides. Then classify it as *convex* or *concave*, *regular* or *irregular*.

a.



quadrilateral
convex
irregular

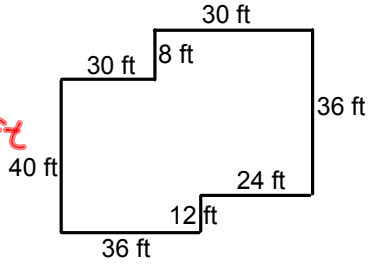
b.



9-gon
concave
irregular

2. A masonry company is contracted to lay three layers of decorative brick along the foundation for a new house given the dimensions below.

$P = 30+8+30+36+24+12+36+40 = 216$ ft



a. Find the perimeter of the foundation to determine how many bricks the company will need to complete the job. Assume that one brick is 8 inches long.

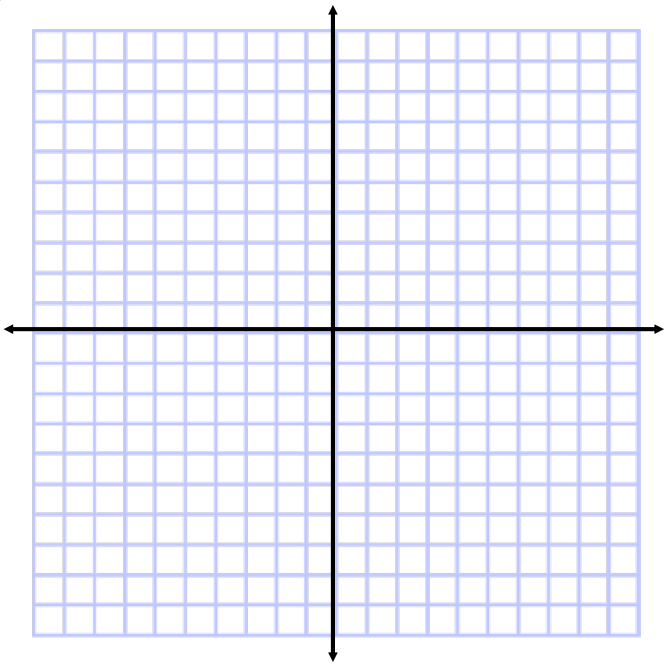
$216 \times 12 = 2592$ in.

$2592 \div 8 = 324$ bricks

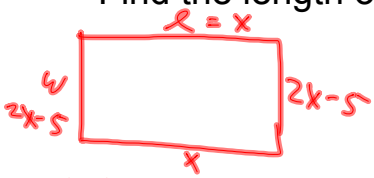
$\times 3$

972 bricks

3. Find the perimeter of pentagon ABCDE with A (0, 4), B (4, 0), C(3, -4), D (-3, -4) and E (-3, 1)



4. The width of a rectangle is 5 less than twice its length. The perimeter is 80 cm. Find the length of each side.



$P = 80$

$x + 2x - 5 + x + 2x - 5 = 80$

$6x - 10 = 80$

$6x = 90$

$x = 15$

$2(15) - 5 = 25$